



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Mosaic disease of tobacco.—ALLARD¹⁵ has recently presented good evidence to combat the theory of WOODS and of HEINTZEL that oxidases are responsible for the mosaic disease of tobacco, in which he showed that the disease was dependent upon a specific infection. A more recent paper by ALLARD¹⁶ describes in detail a study of the properties of the so-called "virus" of the mosaic disease of tobacco. Healthy plants were inoculated with the virus after filtration through a Livingston atmometer porous cup, after filtration through powdered talc, after precipitation with ethyl alcohol, after treatment with formaldehyde, with hydrogen peroxide, with precipitates of aluminum and nickel hydroxides, and after subjecting the virus to high and low temperatures. Plants were inoculated also with water extracts of the dried mosaic tobacco, made after extracting with ether, chloroform, and other solvents. The infectious principle was retained by filtration through Livingston atmometer porous cups and by powdered talc, although the filtrates gave intense peroxidase reactions. Alcoholic solutions of 75-80 per cent destroyed the infective principle, while 45-50 per cent solutions did not, but carried down the infectious principle with the precipitate. Virus treated with one part formaldehyde in 800-1500 parts of solution gave an infection. Stronger solutions gave no infection, although they still gave strong peroxidase reactions. Ether, chloroform, carbon tetrachloride, toluene, and acetone failed to extract either the infective principle or the peroxidase from dried material. The virus was killed at temperatures near 100° C., but when subjected to a temperature of -180° C. for 15 minutes it was not weakened. In every case controls were carried out with tap water and with the untreated virus. From the results the author concludes that neither enzymes nor the constituents of healthy sap can be responsible for the disease, and that since the pathogenic agent is highly infectious and capable of increasing definitely, there is every reason to believe that it is an ultra-microscopic parasite of some kind.—H. R. KRAYBILL.

Fossil Osmundaceae.—KIDSTON and GWYNNE-VAUGHAN¹⁷ have described three species of fossil *Osmundaceae*, two of which are respectively from the Tertiary of Spitzbergen and of Queensland. Another species, *Osmundites Carnieri*, between the Tertiary and Jurassic of the Andes of Paraguay, is most interesting. The authors add something to the original descriptions of SCHUSTER from whom they received their material. The stem unfortunately is not well preserved, but the endodermis frequently joins around the margins of the leaf gaps, and an internal phloem was also probably originally present. The

¹⁵ ALLARD, H! A., The mosaic disease of tobacco. U.S. Dept. Agric. Bull. 40. 1914.

¹⁶ ———, Some properties of the virus of the mosaic disease of tobacco. Jour. Agric. Research 6:649-674. 1916.

¹⁷ KIDSTON, R., and GWYNNE-VAUGHAN, D. T., On the fossil Osmundaceae. Part V. Trans. Roy. Soc. Edinburgh 50:469-480. pls. 41-44. 1916.